

CLAIMS:

1. A hybrid fuel cell system including a fuel cell (20) and an electric power storage device (40), characterized by comprising:
 - a load portion (3) which consumes electric power; and
 - a control portion (1) which controls an amount of electric power consumed by the load portion (3) based on a difference between a supply electric power set value (P_{bat_ref}) indicating an amount of electric power which needs to be supplied from the electric power storage device (40) and an actual supply electric power value (P_{bat_mes}) indicating an amount of electric power which is actually supplied from the electric power storage device (40).
2. The hybrid fuel cell system according to claim 1, wherein the control portion (1) obtains the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40) based on at least a supply electric power set value (P_{fc_ref}) indicating an amount of electric power which needs to be supplied from the fuel cell (20) and a consumption electric power set value (P_{mot_ref}) indicating an amount of electric power which needs to be consumed by the load portion (3).
3. The hybrid fuel cell system according to claim 2, wherein the load portion (3) includes a system accessory, and the control portion (1) obtains the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40), using the consumption electric power set value (P_{mot_ref}) including an amount of electric power consumed by the system accessory (P_{aux_mes}).
4. The hybrid fuel cell system according to claim 2 or 3, wherein the load portion (3) includes a drive motor, and the control portion (1) controls an amount of electric power consumed by the drive motor based on the difference between the supply electric power set value (P_{bat_ref}) indicating an amount of electric power which needs to be supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mes}) indicating an amount of electric power which is actually supplied from the electric power storage device (40).

5. The hybrid fuel cell system according to any one of claims 1 to 4, wherein the control portion (1) changes the amount of electric power consumed by the load portion (3) so as to reduce the difference between the supply electric power set value (P_{bat_ref}) indicating an amount of electric power which needs to be supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mes}) indicating an amount of electric power which is actually supplied from the electric power storage device (40).
6. The hybrid fuel cell system according to any one of claims 1 to 4, further comprising:
 - a filter (42) which removes a noise component contained in the difference between the supply electric power set value (P_{bat_ref}) indicating an amount of electric power which needs to be supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mes}) indicating an amount of electric power which is actually supplied from the electric power storage device (40) and which outputs the difference with the noise component removed to the control portion (1).
7. The hybrid fuel cell system according to claim 6, wherein the control portion (1) changes the amount of electric power consumed by the load portion (3) so as to reduce the difference with the noise component removed.
8. A hybrid fuel cell system including a fuel cell (20) and an electric power storage device (40), characterized by comprising:
 - a load portion (3) which consumes electric power;
 - first control means (11) for obtaining a supply electric power set value (P_{bat_ref}) indicating an amount of electric power which needs to be supplied from the electric power storage device (40), based on a supply electric power set value (P_{fc_ref}) indicating an amount of electric power which needs to be supplied from the fuel cell (20) and a consumption electric power set value (P_{mot_ref}) indicating an amount of electric power which needs to be consumed by the load portion (3);
 - difference obtaining means (41) for obtaining a difference between the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which

needs to be supplied from the electric power storage device (40) and an actual supply electric power value (P_{bat_mos}) indicating an amount of electric power which is actually supplied from the electric power storage device (40); and

second control means (12) for controlling the amount of electric power consumed by the load portion (3) based on the difference.

9. The hybrid fuel cell system according to claim 8, wherein the first control means (11) obtains the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40), based on at least the supply electric power set value (P_{fc_ref}) indicating the amount of electric power which needs to be supplied from the fuel cell (20) and the consumption electric power set value (P_{mot_ref}) indicating the amount of electric power which needs to be consumed by the load portion (3).
10. The hybrid fuel cell system according to claim 9, wherein the load portion (3) includes a system accessory, and the first control means (11) obtains the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40), using the consumption electric power set value (P_{mot_ref}) including an amount of electric power consumed by the system accessory (P_{aux_mes}).
11. The hybrid fuel cell system according to claim 9 or 10, wherein the load portion (3) includes a drive motor, and the second control means (12) controls an amount of electric power consumed by the drive motor based on the difference between the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mos}) indicating an amount of electric power which is actually supplied from the electric power storage device (40).
12. The hybrid fuel cell system according to any one of claims 8 to 11, characterized by further comprising:
computing means (17) for changing the amount of electric power consumed by the load portion (3) so as to reduce the difference between the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be

supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mos}) indicating an amount of electric power which is actually supplied from the electric power storage device (40).

13. The hybrid fuel cell system according to any one of claims 8 to 11, characterized by further comprising:
 - a filter (42) which removes a noise component contained in the difference between the supply electric power set value (P_{bat_ref}) indicating the amount of electric power which needs to be supplied from the electric power storage device (40) and the actual supply electric power value (P_{bat_mos}) indicating an amount of electric power which is actually supplied from the electric power storage device (40), and which outputs the difference with the noise component removed to the control portion (1).
14. The hybrid fuel cell system according to claim 13, characterized by further comprising:
 - computing means (17) for changing the amount of electric power consumed by the load portion (3) so as to reduce the difference with the noise component removed.